

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 9021.12.WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US 03/11719	International filing date (day/month/year) 15.04.2003	Priority date (day/month/year) 20.04.2002
International Patent Classification (IPC) or both national classification and IPC H01M2/28		
Applicant ENERSYS EUROPEAN HOLDINGS CO. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I  Basis of the opinion
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 05.11.2003	Date of completion of this report 18.06.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Gosselin, D Telephone No. +49 89 2399-8400



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US 03/11719

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-8 as originally filed

**Claims, Numbers**

1-19 as originally filed

**Drawings, Sheets**

1/7-7/7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-19
	No: Claims	
Inventive step (IS)	Yes: Claims	1-19
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

**see separate sheet**

Re Item V

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

- D1: EP-A-0 944 120 (CHLORIDE IND BATTERIES LIMITED) 22 September 1999 (1999-09-22)
- D2: US-A-4 509 253 (EBERLE KELLY L) 9 April 1985 (1985-04-09)
- D3: EP-A-0 314 318 (GATES ENERGY PRODUCTS INC) 3 May 1989 (1989-05-03)
- D4: US-A-3 841 915 (EBERLE W) 15 October 1974 (1974-10-15)
- D5: PATENT ABSTRACTS OF JAPAN vol. 2000, no. 24, 11 May 2001 (2001-05-11) & JP 2001 185206 A (SHIN KOBE ELECTRIC MACH CO LTD), 6 July 2001 (2001-07-06)
- D6: PATENT ABSTRACTS OF JAPAN vol. 017, no. 272 (E-1371), 26 May 1993 (1993-05-26) & JP 05 013066 A (JAPAN STORAGE BATTERY CO LTD), 22 January 1993 (1993-01-22)
- D7: PATENT ABSTRACTS OF JAPAN vol. 1996, no. 12, 26 December 1996 (1996-12-26) & JP 08 222199 A (SHIN KOBE ELECTRIC MACH CO LTD), 30 August 1996 (1996-08-30)
- D8: PATENT ABSTRACTS OF JAPAN vol. 013, no. 123 (E-733), 27 March 1989 (1989-03-27) & JP 63 291361 A (SHIN KOBE ELECTRIC MACH CO LTD), 29 November 1988 (1988-11-29)
- D9: EP-A-0 734 084 (MATSUSHITA ELECTRIC IND CO LTD) 25 September 1996 (1996-09-25)

2. The present application meets the requirements of Article 33(1) to (3) PCT.

2a. The battery according to claims 14 to 19 is novel over the disclosure of D3.

D3 in one embodiment (figures 6a to 6d and column 9, line 48 to column 10, line 37) discloses a battery with enhanced vibration resistance of the connection (column 10, lines 32-34 and column 3, lines 46-58) by providing a heat seal between the conductive connecting strap 60 attached to the projecting tabs of the positive plates and the intercell partition 54.

In view of Figure 4, it appears that this sealing does not cover the projecting tabs 56 and 58 and the adjacent upper portions of the positive plates 42'. D3 does not provide evidence that sealing material should reach any portion of the plates 42' or the projecting tabs 56 and 58.

Considering that according to the application tabs and part of the positive electrode plates are also embedded in a capping material an enhanced resistance to vibrations is to be expected by comparison to the battery of D3.

- 2b. It is admitted that the method of claim 1 differs from the method disclosed in D3. D3 does not disclose applying a single capping material by a method according to claim 1 of the application in order to form "a cap covering portions of the projecting tabs and adjacent upper portions of the positive plates." The claimed method is apparently less complicated and does not involve a heat-pressing of the cover of the battery in order to melt the material of the separations and of the cover.
- 2c. Since D3 does not comprise any hint to manufacture a battery according to the method of claim 1, the subject-matter of claims 1 to 19 seems to involve an inventive step over the disclosure of D3.
3. There is further apparently no reason for a skilled man to combine the disclosure of D3 with that of any of the other documents referred to during examination.

The subject-matter of claims 1 to 19 is novel over the disclosure of D1, D2 and D4, D5, D7 and D8 in that the cap material covers portions of the projecting tabs, but there is no disclosure that it should also cover adjacent upper portions of the positive plates may improve the mechanical resistance of the tabs.

The function of the sealant in these documents is essentially the protection of the weldment. There is no suggestion that the provision of the sealant between the tabs and the positive electrode plates should enhance the vibration resistance of the batteries.

D6 discloses a process in which the negative tabs and plates are capped with a resin in order to prevent corrosion. D6 does not refer to the capping of positive tabs and plates and to the mechanical properties of the battery.